IN THE CLAIMS:

Please amend the claims as follows:

1-2. (canceled)

3. (currently amended) A purified polypeptide having the amino acid sequence of ~~any one of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4,~~ SEQ ID NO: 5 ~~, or SEQ ID NO: 6~~.

4-8. (canceled)

9. (withdrawn) A purified polynucleotide having the sequence of any one of SEQ ID NO: 7, SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 11, or SEQ ID NO: 12.

10-18. (canceled)

19. (withdrawn) A culture containing a polynucleotide of claim 9, said culture as deposited at the C.N.C.M. and containing any one of the plasmids in deposit accession No. I-2507, I-2508, I-2509, I-2510, I-2511, I-2512, or I-2513.

20-25. (canceled)

26. (previously presented) A peptide linker that links a donor site to an acceptor site to permit a direct transfer of energy by chemiluminescence in a purified polypeptide wherein the polypeptide has a sequence as claimed in claim 3.

27. (withdrawn) A nucleotide linker having the nucleotide sequence of any one of SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, or SEQ ID NO: 17.

28-32. (canceled)

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33. (currently amended) A peptide linker ~~of at least 5 amino acids~~ comprising the amino acid sequence of ~~any one of SEQ ID No: 18, SEQ ID NO: 19, SEQ ID NO: 20, SEQ ID NO: 21, or~~ SEQ ID NO: 22.

34-38. (canceled)

39. (currently amended) A peptide linker according to claim 33, wherein the peptide linker ~~has the capacity to stabilize~~ stabilizes a modified bioluminescent system *in vivo* and/or *in vitro* to allow the transfer of energy by Chemiluminescence Resonance Energy Transfer.

40. (currently amended) A ~~modified bioluminescent system~~ fusion protein comprising two bioluminescent proteins and a peptide linker according to claim 33.

41. (currently amended) ~~A modified bioluminescent system~~ The fusion protein according to claim 40, wherein said two bioluminescent proteins comprise at least an aequorin protein.

42. (currently amended) The ~~modified bioluminescent system~~ fusion protein of claim 40 comprising aequorin protein and a GFP protein.

43. (canceled)

44. (currently amended) A fusion protein of the formula:

GFP - LINKER - AEQ:

wherein GFP is green fluorescent protein;

AEQ is aequorin; and

LINKER is a ~~polypeptide of 4-63~~ polypeptide of 14-50 amino acids.

45-56. (canceled)

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57. (new) A composition comprising the fusion protein of claim 44, wherein the composition binds calcium ions and transmits measurable energy, wherein the amount of energy depends on the quantity of calcium bound and the quantity of peptide in the composition in absence of any light excitation.

58. (new) The composition according to claim 57, wherein the fusion protein comprises SEQ ID NO: 5.

59. (new) A peptide linker comprising SEQ ID NO: 22, wherein the linker links a donor site to an acceptor site to permit a direct transfer of energy in the presence of the fusion protein of claim 44.

60. (new) A kit for measuring the transfer of energy *in vivo* or *in vitro* comprising the fusion protein of claim 44 and reagents necessary for visualizing or detecting transfer of energy in the presence or in the absence of a molecule of interest.

61. (new) A method of screening for a change in a physical, chemical, biochemical, or biological condition, the method comprising the steps of:

a) administering to a vertebrate or a biological sample from a vertebrate the composition of claim 57;

b) detecting whether light is produced in the mammal or the biological sample from the mammal; and

c) optionally measuring the ionic concentration of calcium flux.

62. (new) A method of screening *in vitro* a change in a physical, chemical, biochemical, or biological condition, wherein the method comprises:

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(a) adding into a reaction system a composition according to claim 57 containing an analyte of interest in presence or in absence of a molecule of interest to be tested; and

(b) visualizing the emission of energy produced in step (a).

63. (new) A method of screening of a product leading to a change in a physical, chemical, biochemical or biological condition, wherein the method comprises:

(a) administering to a vertebrate or a biological sample from a vertebrate a pharmaceutically acceptable medium comprising the composition according to claim 57 in presence or in absence of a molecule of interest to be tested;

(b) detecting energy produced in presence of said composition; and

(c) optionally, measuring the effective concentration of said molecule of interest necessary for the detection of the energy in step (b).

64. (new) A method of screening *in vitro* for a molecule in a biological sample that inhibits or increases the measurable energy in the composition of claim 57, wherein the molecule is contained in a reaction system, wherein the method comprises:

(a) detecting an increase or decrease of the energy in the reaction system by comparison with a control reaction system containing the composition of claim 57 without the molecule to be tested; and

(b) optionally, determining the effective minimal concentration of the molecule capable of inhibiting or increasing the energy transfer of the composition in the reaction system.

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